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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,692	07/31/2003	Yasunobu Suzuki	2003_1066A	7674

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EXAMINER

CAVALLARI, DANIEL J

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,692

Applicant(s)

SUZUKI ET AL.

Examiner

Daniel J. Cavallari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/28/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

The examiner acknowledges a submission of the amendment filed on 8/28/2006. The amendment to the abstract, drawings and cancellation of claims 1-10, and new claims 11-21 are accepted.

The previously made objections to abstract and claims have been withdrawn in view of the amendments.

The substitute specification filed 8/28/2006 conforms to 37 CFR 1.125(b) and (c) and therefore has been entered.

Response to Arguments

Applicant's arguments with respect to claims 11-21 have been considered but are moot in view of the new ground(s) of rejection.

Foreign Priority

As stated in the previous non-final office action, acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on 8/1/2002 and 7/28/2003. It is noted, however, that applicant has not filed certified copies of either the 2002-224787 or 2003-280883 application as required by 35 U.S.C. 119(b).

Drawings

Figures 1, 2, 3 & 6 are objected to for the following reasons:

In regard to Figure 3

- The figure discloses an AC and a DC supply being inputted to a transformer however the examiner notes that the transformer would block the DC signal.

In regard to Figure 6

- Figure 6 shows a DC voltage produced by the high frequency transformer (HFT) however the examiner notes that the HFT would block DC voltages and passes only high frequencies therefore it is unclear how a DC voltage is produced at the output of the HFT.

In regard to Figures 1 & 2

Figures 1 & 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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In regard to Figure 3

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the specific connections of the AC/DC load "Lac/dc" as described in the specification. Furthermore, the specification states "In this manner, the DC power supply and the AC power supply are designed to be switched by a control circuit, not illustrated" however any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. Typical loads except either AC or DC power and not both therefore the details of the connection are essential to the operation of the device. Figure 3 shows the interconnection of both AC and DC loads however such a connection is not referenced with the particular claimed embodiments of the invention.

MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

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not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-15, 17, 19, & 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regard to Claims 11 & 12

Claims 11 & 12 recite providing both AC and DC power to a load however neither the specification nor figures adequately disclose how this is achieved nor disclose a load capable of operating on both AC and DC power. The specification intentionally omits these crucial details ""In this manner, the DC power supply and the AC power supply are designed to be switched by a control circuit, not illustrated" (See. Specification Page 7).

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In regard to Claim 12

Claim 12 further is not enabled by the specification in regard to the DC power provided to the load via the high frequency transformer. Referring to figure 6, the examiner notes that DC power is shown as being provided from the alternative energy sources however a high frequency transformer will pass high frequencies and block low frequencies (ie. DC) making it unclear how a DC voltage is being outputted as shown in Figure 6.

In regard to Claim 13

Claim 13 recites the limitation of "the three-winding electronic transformer is operable to converter the DC power from the battery into the AC power..." The examiner notes that transformers are not capable of voltage conversion nor does the applicant disclose details of such a transformer which can also convert from DC to AC power.

Claims 11, 13, 14, 16, 18, 19, & 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to Claim 11

Claim 11 recites the limitation of "terminal period of discharging" however the term is not one ordinarily used or known in the art therefore it is unclear what a "terminal

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period of discharging” is referring to. The claim will be examined as best understood to mean “... a predetermined minimum charge value...”

In regard to Claim 13

The limitation of “unidirectional switches” is unclear as it is unclear what constitutes a unidirectional switch seeing as typical switches are bidirectional. Furthermore, the specification discloses “unidirectional switches” as (S5) and (S6) of Figure 11 however the examiner points out that standard semiconductor switches are pictured which permit current flow in both directions. The examiner does point out that diodes are placed across the switch restricting current flow to one direction when the switch is off however this does not make the switch itself unidirectional. The term “unidirectional” will be interpreted as best understood as taught by the specification in which a diode is placed in parallel with a switch restricting current flow when the switch is open.

It is unclear what is meant by a “boost type rectifying operation” as rectification involves converting from AC power to DC power and “boost type” is not a standard term used in the art which carries any particular limitations. The examiner further notes that the rectification is claimed to be performed via a “DC-DC converter” “...supply the DC power to the DC-DC converter for performing a boost type rectifying operation...” however rectification is the process of converting from AC to DC power and it is therefore unclear how a DC to DC converter can provide rectification of a signal.

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It is unclear what is meant by the statement "...alternately reversing a high frequency modulation phase of the two unidirectional switches or the two pairs of unidirectional switches of the first modulation/demodulation semiconductor switch per half cycle of a commercial frequency and then demodulating to remove a sinusoidal wave AC output..." Specifically:

- It is unclear what is meant by "alternately reversing a high frequency modulation phase... per half cycle of a commercial frequency".

It is unclear what is meant by the statement "...when the battery has been almost fully charged at a light load and the AC power source has not failed for automatic phase synchronization..."

Because of the 112 issues with the claims, no art can be applied to claims 11-21.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

November 14, 2006


CHAU N. NGUYEN
PRIMARY EXAMINER